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Application of machine learning models to discriminate tourist landscapes using eye-tracking data

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Nowadays tourist websites make extensive use of images to promote their structure and the its location. Many images, such as landscapes, are used extensively on destination tourism websites to draw tourists'interest and influence their choices. The use of eye-tracking technology has improved the level of knowledge of how different types of pictures are observed. An eye-tracker enables to accurately define the eye location and therefore to carry out precise measurement of the eye movements during the visualization of different stimuli (e.g. pictures, documents).
Eye-tracking data can be analyzed to convert the viewing behavior in terms of quantitative measurements and they might be collected for a variety of purposes in a variety of fields, such as grouping clients, improving the usability of a website, and in neuroscience studies. Our work aims to use eye-tracking data from a publicly available repository to get insight of user behavior regarding two main categories of images: natural landscapes and city landscapes. We choose to analyze these data using supervised and unsupervised methods. Finally, we evaluate the results in terms of which choice should be made between possible options to shed light on how decision-makers should take this information into account.

Keywords

tourism, images, eye-tracking, machine learning

Special/invited session

ISBIS session

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